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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,309	02/06/2004	Nobuhiko Noma	P24208	7412

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GREENBLUM & BERNSTEIN, P.L.C.  
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RESTON, VA 20191

EXAMINER
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ETTEHADIEH, ASLAN

ART UNIT	PAPER NUMBER
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2611

NOTIFICATION DATE	DELIVERY MODE
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06/13/2007

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

## Office Action Summary

Application No.

10/772,309

Applicant(s)

NOMA ET AL.

Examiner

Aslan Ettehadieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☒ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Information Disclosure Statement***

3. The information disclosure statement filed 05/14/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document (JP 2002-500855); each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### ***NOTE***

4. Please note that all references made herein to the instant application are made with respect to paragraphs of U.S. Patent Application Publication No. 2005/0025227, the publication corresponding to the instant application.

### ***Claim Objections***

5. Claims 1 and 8 are objected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, wherein

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a signal cannot be detecting. A signal can be used for detecting, or a unit can detect, etc.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2002/0114347) in view of Lu (US 6275836).

7. Regarding claim 1, Park discloses a VDSL modem apparatus comprising: an exchange unit that transmits and receives a communication distance detecting signal (paragraphs 20, 22 – 23, 27), the signal detecting a communication distance to an opposing VDSL modem apparatus during an initialization sequence according to one of the ITU-T standard G.992.1 and G.992.2 (paragraphs 20, 22 – 23, 27; where it would have been obvious to one skilled at the time the invention was made to use the ITU-T standard G.992.1 and G.992.2 instead of G.994.1 because G.994.1 is a more updated version. Applicant can refer to US patents: paragraph 167 of 2004/0174903, paragraph 35 of 2003/0210739, paragraph 10 of 2003/0118088, paragraphs 29, 39 of 2003/0108065; to show that one skilled in the art at the time of invention was made would know G.994.1 and G.991.1 or G.991.2 are obvious variants of one another); and a estimation unit that estimates the communication distance to the opposing VDSL modem apparatus according to a reception level of the communication distance

detecting signal (paragraphs 20, 22 – 23, 27). Park is not explicit about ADSL, however, it would have been obvious to one skilled in the art at the time of invention was made to use ADSL instead of VDSL because VDSL provides an increased speed. Considering ADSL and VDSL are both variations of DSL, a design would be beneficial to choose between the two depending on speed and distance range of the system. Also, VDSL has two versions: "symmetric" and "asymmetric". (Applicant can refer to US patents: paragraph 2 of 2006/0187954, paragraphs 7,15 of 2004/0027998, paragraph 43 of 2002/0159457, paragraph 4 of 2002/0131568; to show that one skilled in the art at the time of invention was made would know ADSL and VDSL are obvious variants of one another). Park does not disclose the signal having comb-shaped frequency characteristics.

In the same field of endeavor, however, Lu discloses a signal having comb-shaped frequency characteristics (col. 6 line 10 – 31, col. 7 lines 64 – 29).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a signal having comb-shaped frequency characteristics as taught by Lu in the system of Park to comb filters are known to present sharp attenuation of any aliasing frequencies (tones) that fall near the edge of the baseband, the comb filter can be tuned by increasing the order of the comb filter and thereby suppressing or attenuating aliasing or imaging signals, i.e. attenuate any spectral components of the data signal that remain in conflict with the visual spectrum (col. 6 line 10 – 31, col. 7 lines 64 – 29).

8. Regarding claim 3, Park further discloses wherein said estimation unit estimates the communication distance to the opposing VDSL modem apparatus by comparing reception levels of two carriers, the carriers being selected from a plurality of carriers that configure the communication distance detecting signal (paragraphs 29 – 30).

9. Regarding claim 6, Park further discloses wherein the VDSL modem apparatus is located at a remote side, and wherein the communication distance between the remote side VDSL modem apparatus and a center side VDSL modem apparatus is estimated (paragraphs 5, 20, 22 – 23, 27).

10. Regarding claim 7, Park further discloses wherein the VDSL modem apparatus is located at a remote side, and wherein the communication distance between the remote side VDSL modem apparatus and a center side VDSL modem apparatus is estimated (paragraphs 5, 20, 22 – 23, 27).

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2002/0114347) in view of Ginesi et al. (US 2002/0072386).

12. Regarding claim 2, Park is silent about the timing in reference to the REVERB, however, Park does disclose accordance with one of the ITU-T standard G.992.1 and G.992.2 as shown above in claim 1.

In the same field of endeavor, however, Ginesi discloses wherein the communication distance detecting signal is transmitted and received prior to a transmission of a REVERB signal (paragraph 32 – 38, especially paragraph 34; where the communication distance detecting signal is transmitted and received during the REVERB stage, thus being prior to a transmission of a REVERB signal).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use wherein the communication distance detecting signal is transmitted and received prior to a transmission of a REVERB signal as taught by Ginesi in the system of Park to minimize rate loss (paragraphs 34 – 35).

13. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (US 2002/0114347) in view of Lu (US 6275836) in view of Oksman et al. (US 2003/0223482).

14. Regarding claims 4 and 5 Park does not disclose concentrates signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power and also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased

In the same field of endeavor, however, Oksman discloses concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power and also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased (paragraphs 45 – 50, figures 11 – 12).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power and also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased as taught by Oksman in the system of Park to save on power.

15. Regarding claim 8, Park discloses a VDSL modem apparatus, the method comprising: receiving a communication distance detecting signal, the signal detecting a communication distance to an opposing VDSL modem apparatus during an initialization sequence according to one of the ITU-T standard G.992.1 and G.992.2 (paragraphs 20, 22 – 23, 27; where it would have been obvious to one skilled at the time the invention was made to use the ITU-T standard G.992.1 and G.992.2 instead of G.994.1 because G.994.1 is a more updated version, Applicant can refer to US patents: paragraph 167 of 2004/0174903, paragraph 35 of 2003/0210739, paragraph 10 of 2003/0118088, paragraphs 29, 39 of 2003/0108065; to show that one skilled in the art at the time of invention was made would know G.994.1 and G.991.1 or G.991.2 are obvious variants of one another); estimating the communication distance to the opposing VDSL modem apparatus according to a reception level of the communication distance detecting signal (paragraphs 20, 22 – 23, 27). Park is not explicit about ADSL, however, it would have been obvious to one skilled in the art at the time of invention was made to use ADSL

instead of VDSL because VDSL provides an increased speed. Considering ADSL and VDSL are both variations of DSL, a design would be beneficial to choose between the two depending on speed and distance range of the system. Also, VDSL has two versions: "symmetric" and "asymmetric". (Applicant can refer to US patents: paragraph 2 of 2006/0187954, paragraphs 7, 15 of 2004/0027998, paragraph 43 of 2002/0159457, paragraph 4 of 2002/0131568; to show that one skilled in the art at the time of invention was made would know ADSL and VDSL are obvious variants of one another). Park does not disclose the signal having comb-shaped frequency characteristics. Park does not disclose concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power.

In the same field of endeavor, however, Lu discloses a signal having comb-shaped frequency characteristics (col. 6 line 10 – 31, col. 7 lines 64 – 29).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use a signal having comb-shaped frequency characteristics as taught by Lu in the system of Park to comb filters are known to present sharp attenuation of any aliasing frequencies (tones) that fall near the edge of the baseband, the comb filter can be tuned by increasing the order of the comb filter and thereby suppressing or attenuating aliasing or imaging signals, i.e. attenuate any spectral components of the data signal that remain in conflict with the visual spectrum (col. 6 line 10 – 31, col. 7 lines 64 – 29).

In the same field of endeavor, however, Oksman discloses concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power (paragraphs 45 – 50, figures 11 – 12).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power as taught by Oksman in the system of Park to save on power.

16. Regarding claim 9, Park does not disclose discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased

In the same field of endeavor, however, discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased (paragraphs 45 – 50, figures 11 – 12).

Therefore it would have been obvious to one skilled in the art at the time of invention was made to use wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing modem apparatus is increased as taught by Oksman in the system of Park to save on power.

***Other prior art cited***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Fitzgerald (US 2002/0107013) discloses concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing ADSL modem apparatus is increased (paragraph 6).

18. Wenzel et al. (US 2003/0003940) discloses concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band, when the communication distance to the opposing ADSL modem apparatus is increased (paragraph 3).

19. Chen (US 2003/0157890) discloses concentrating signal energy into a low frequency band, the signal energy being assigned to a transmission signal according to the estimated communication distance is common to save on power also discloses wherein said communication unit minimizes the signal energy assigned to a high frequency band and increases the signal energy assigned to the low frequency band,

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when the communication distance to the opposing ADSL modem apparatus is increased (abstract, paragraphs 9 – 11).

**Contact Information**


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aslan Ettehadieh whose telephone number is (571) 272-8729. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on (571) 272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aslan Ettehadieh  
Examiner  
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